XXXI.

ANIMADVERSIONS ON THE DANGEROUS PRACTICE OF SLEEPING ON THE DAMP GROUND AND OF EXPOSURE TO THE NIGHT AIR, PARTICULARLY WHERE THE ANIMAL POWERS ARE DIMINISHED; ILLUSTRATED ON PHILOSOPHICAL PRINCIPLES;

Inclosed with a letter to Aaron Dexter, M.D. F.A.A. *and William Spooner*, M.D. F.A.A.

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NOCTES ATQUE DIES PATET ATRI JANUA DITIS. VIRG. ÆN. LIB. VI.

IT is the office of the physician to endeavour not only to cure, but to prevent diseases; and though the latter may sometimes seem to clash with his immediate interest, yet duty and humanity nevertheless demand it. Among the lower orders of people, ignorance is the frequent source of many of their calamities. Though few can be so ignorant, as not to know that dangerous and fatal maladies have been contracted from damp rooms, damp linen, or damp clothes, yet many may still be unaware, that the earth's surface, however dry it may appear, is constantly exhaling moisture; that the human body after being heated (or, to use a modern term, preternaturally excited) by a hot sun, hard labour, or intemperate drinking, is rendered much more susceptible of injury, from cold thus partially applied; and finally, that the danger is materially increased by inactivity, and the relaxing influence of sleep. For preternatural excitement, from whatever cause, constantly produces a proportionate collapse, or diminution of the animal powers. Certain late writers indeed, fond of singularity,

have unguardedly ventured to persuade the public, that the ill effects imputed to sleeping in damp linen are merely imaginary; nay further, that the sprinkling of the sheets with cold water on going to bed is wonderfully salutary and refreshing, particularly to the weary traveller, exhausted with fatigue. Should our travelling invalids be so silly as to be misled by such a doctrine, or so imprudent as to hazard the experiment, they would soon feel cause to be convinced of their folly, and to lament their credulity.

It is therefore not without compassion and regret, that one sees so many inconsiderate people, under the above circumstances, lying prostrate on the damp ground, often sleeping for hours; sometimes even after rain, and when innumerable dew drops are visible on the grass; a practice too common, but which can never be sufficiently reprobated.* It has been discovered by experiments, that even in the driest seasons, a square foot of earth exhales an almost incredible quantity of watery moisture; that the evaporation increases in proportion to the heat of the atmosphere, and that, in proportion to the rapidity of evaporation, cold is generated. This process may be easily increased to a degree sufficient to convert water into ice, as an article of luxury, even in the hottest climates, as is well known in the East and West Indies.

In the temperate climate of Great Britain in a dry season, Dr. Watson discovered by experiment, that an acre of grass plat, clean mowed, yielded by evaporation after the rate of 1600 gallons per day, and after rain considerably more. The quantity of aqueous evaporations, *cæteris paribus*, is in direct proportion to the surface exposed, the heat of the climate, and the dryness of the atmosphere. Hence

* For example, in the State House garden of Philadelphia, although numerous benches are always ready to accommodate company with seats.

the evaporation of the summer months, on a medium, probably equals that of the rest of the year, and its quantity, in this warm climate, must of course exceed that of Great Britain. Evaporation is greatly accelerated by a brisk wind ; and the more rapid the evaporation, the greater (as has been hinted) is the degree of cold it produces. Add to this, that a sudden depression of 12 or 14 degrees of temperature (as often suddenly happens in this variable climate) is sufficient to cause the dew to fall, increasing the coldness of the ground and superincumbent atmosphere. This alone, in persons already enfeebled by the causes abovementioned, greatly enhances the danger. The hardy sailor indeed, through habit can, during a long voyage, bear with impunity to lie down in his clothes, though dripping-wet with sea-spray, yet this does not render him proof against the heavy dews of a hot climate on shore, where, if he imprudently sleep in the open air, though but a single night, it is at the risque of his life, as too many able seamen have experienced.*

The human body, exposed to the damp ground when weakened by infirm health, fatigue, or intemperance, is predisposed to receive, in its full force, the injurious impression of cold and moisture. When a person, under such circumstances, awakes from his sleep in a half torpid state, he generally feels a sense of numbness, chilliness, and inactivity through all his limbs, which (to say nothing of the loss of time and the endangering of health) renders him listless and unfit to renew his daily task with his wonted vigour and alacrity. But this is not all. For those, who indulge this dangerous habit, may think themselves fortunate, if they are not speedily overtaken by some severe disease, which may not only deprive them of working for themselves and families, but render them burthensome to their friends and the public. Cer-

* See Lind, and other late authors on the diseases of hot climates.

tainly a more ready means of procuring some obstinate, acute, or chronic disease could scarcely be devised. As if the avenues to pain, misery, and death, were not already sufficiently numerous without wantonly increasing them by temerity or fool-hardiness.

Can we wonder then at the frequency of rheumatisms, palsies, fevers of different kinds, coughs, and consumptions, which prevail in the finest and serenest weather? Or that the weekly bills of mortality should so often increase at that season of the year, when this imprudent practice is most frequent? Of its pernicious effects our hospitals and dispensaries could doubtless afford too many sad examples. These are well known to medical practitioners, yet the cause appears hitherto to have escaped public notice; and while it remains unnoticed, unreproved, the abuse will, of course, be continued to the no small detriment of individuals and of the state.

Labouring people have indeed been repeatedly cautioned, by the Humane Society, and very properly, against drinking cold water, when the body is heated; the practice being considered in this climate, as the frequent cause of sudden death. In Great Britain however it rarely proves fatal, but often produces obstinate cutaneous eruptions. It may indeed be fairly presumed, that where certain individuals, from a peculiar debility, or idiosyncrasy, fall victims to the cause, a still greater number contract dangerous diseases by unguardedly sleeping on the damp ground, wet clothes, or damp beds. The ordinary temperature of the springs and pump waters in this city has been stated at about 53°, and that of the hydrant, conveyed from the river Schuylkill, is allowed to be in summer several degrees warmer.*

* September 15, 1807. The water of two pumps, one in Walnut street, the other in Fifth street, fresh drawn, are found by experiment this day to be 58°. While that of a neighbouring hydrant of Schuylkill water marks 74,° the present heat of the atmosphere.

Now if sudden death be often occasioned by drinking either of these waters, when the body is heated, how much greater would seem the danger, if drank when cooled down about 26 degrees lower viz. to the freezing point? Yet how many, when heated by dancing, or other violent exercise, eagerly assuage their thirst by copious draughts of ice water, or lemonade, cooled by ice? Nay, by freely eating ice itself in the various forms of ice creams? Yet hazardous as this practice undoubtedly is, few authentic instances of sudden death from that cause, have come to our knowledge. Is that delicate organ, the stomach, then, able to bear the sudden and violent transitions of heat and cold, better than the outward surface of the body? Is not the skin the exquisite organ of feeling, and is it not more tremblingly alive to various impressions, than the stomach itself? Otherwise whence is it, that a person can drink tea and coffee extremely hot without emotion, yet, if let fall on his skin, complains bitterly of being scalded? Admitting this, it tends to corroborate our present doctrine. For of all the remote causes of human maladies, the sudden or partial application of cold and moisture to a body predisposed is evidently one of the most frequent and most injurious. Were it not for this, and the periodical returns of the malignant and remittent fever (of which, during an epidemic constitution, exposure to cold is known to be a powerful exciting cause), the summer would, in all probability, prove the most healthy season.

It may not be improper in this place just to hint a necessary caution respecting another custom, fashionable among all ranks of society, as it doubtless endangers health. It is the habit of sitting, long after sunset, on summer evenings in the open air, exposed to the descending dews; often on cold marble steps before the doors; or in passages in the full current of the night air. But however pleasing and refreshing the cool air of the evening may appear, after the in-

tense heat of the day, yet, for reasons assigned, much caution is required. The example of the healthy and robust ought by no means to encourage the delicate and valetudinary to indulge indolence at the expense of their welfare, in sitting till a late hour. Have not such persons too often cause to regret the effects of their temerity? The evening air till about sun set, or an hour after, might surely be enjoyed with equal advantage, and more safety, were walking, riding, or other gentle exercise adopted instead of the present inactive, sedentary habit.

From a series of observations in this variable climate, I find by the thermometer that, during the summer months, the temperature of the external atmosphere from four o'clock in the afternoon till ten in the evening commonly undergoes a diminution from twelve to sixteen degrees. But on a sudden storm from the north east, accompanied with heavy rain, the mercury in the course of a few hours sometimes undergoes a still more surprising depression, of twenty five to thirty five degrees. Yet regardless of these sudden transitions, fashionable young people disdain to appear in warmer clothing. Ladies though valetudinary resolve to continue their elegant summer dress, or rather *undress* to the verge of winter. How many blooming females thus sacrifice health, beauty, and life itself, at the shrine of fashion!

Can we wonder at the frequency and fatality of pulmonic diseases, or that consumption alone, should constitute more than one fifth of the deaths, which appear in the annual bills of mortality?

It is very observable among young persons, especially those of a delicate constitution and sprightly disposition, that when they are conscious of having thus contracted an obstinate complaint through their own indiscretion, they studiously ascribe it to any other cause, rather than the right one; particularly if the latter be of the fashionable, or

pleasurable kind. A species of deception, which may often impose on parents and guardians, but cannot easily elude the penetration of a sagacious physician.

Perhaps it will be objected, if sleeping on the ground, or exposure to the night air at a late hour be so very injurious, whence is it, that any of those, who indulge these habits, escape with impunity? The same question may be urged, when a malignant fever rages with epidemic violence, whence is it, that some persons in the infected neighbourhood escape, and continue to enjoy their usual health? A few such escapes thus betray many into a fatal security. But is it not more prudent to take warning from the calamities of others, than to run headlong into dangers, that might easily be avoided?

"Felix quem faciunt aliena pericula cautum."

CORRIGENDA ET ADDENDA.

Page.	*Line*	
1	1	prefix I.
18	—	— II.
23	—	— III.
33	—	— IV.
38	—	— V.
40	—	— VI.
—	12	for 1 read 6.
55	16	for 962,6 read 966,66.
—	28	— 291,7 — 291,66.
—	30	— 666,66 — 669,44.
—	31	— 904,54 — 905,55.
—	32	— 962,6 — 966,66.
84	2	for dawn read down.
—	14	— concession — concussion.
112	4 b.	— 1786 — 1759.
133	19	— Crystal and — Crystals of.
150	13 b.	— Crousted — Cronstedt.
175	13	— ufr — fur.

Note. Mr. Barrell's measures of rain, page 104, are expressed in inches and decimals of an inch, the first three places on the right being decimals.

Note 2. The top of the funnel of the rain-guage, used by the Rev Mr. Newell, was about 15 inches above the surface of the ground. See page 122.